

## 150 Years of Innovation and Research in Textile Science

# A DESIGN TOOL TO IDENTIFY AND MEASURE THE PROFILE OF SUSTAINABLE CONSCIOUS FASHION COSTUMER

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## ABSTRACT

This research intends to help designers to improve their projects for a new market whose concerns are leaning toward a more sustainability life-style.

Clothing, more precisely "fashion", a better term for describing the clothing system in the period in which we live [1], is the fruit of contemporary consumer products and one way of human subject expressiveness of social and economic representation in society. The purchase of these products has witnessed an evolution, first they were searched by need and now they were bought by impulse and consumer desire. This is the reflection of a complex and organized system called *fast-fashion*. Consumers have been encouraged to buy a greater volume of clothes and a large amount of waste materials has been increased as well as their impact in Nature.

However, the environmental awareness also grew and a new kind of market emerges in the field of fashion [2]. The "environment" has become a differentiation source and a concern requirement that designers and green companies have to recognize, especially because of the values related to the preservation of the universe as a whole; this is increasingly felt by consumers, the main social actors in the construction of the consumption of green products and brands [3]. All products we buy obey to a lifecycle, but if the *Design* is a methodology to "solve problems", *designers* can change consumption trends by projecting products of greater durability and more efficiency planning, rationalizing all resources implied in the product lifecycle [4].

This study is made on the basis of a similar study performed by Bertolini and Possamai, but instead of being applied to a generic ecologically, ethical products, it will be specific for the clothing field. A methodology will be made based on an instrument in the form of questionnaire for a consumers focus group between 25 and 65 years, part of a active working population that has more interest in Fashion [5]. The study variables will take into account not only generic parameters related to the type of most

consumed clothes but as the type of conservation exerted on its use and on its disposal.

This instrument will identify groups of consumers with similar personal values, it will examine their buying criteria and it will verify their level of environmental consciousness, having as perspective on the economic viability of future clothes design products.

## KEYWORDS

Ethical Consumer, Environmental Consciousness, Clothing, Waste

## INTRODUCTION

The present study is part of a PhD project in Design, with the title "Clothing Design Sustainability ", which the goal involves the creation of clothing with raw materials from discarded clothing. This issue is of high relevance because in Portugal does not exist any kind of research in that area and there are few policies to collect unusable or discarded garments.

In order of culminate this gap we propose this work starting with an "instrument for the identification and measurement of consumer profile of ethical fashion" to discover future needs and proper methods of reuse and recycling of clothes. Therefore, the consumer is the starting point of the research process because it will be through their opinions and attitudes, regarding the buying criteria and policies of waste, and the reuse of clothing, that Design methodology will progress.

This tool will allow to find values and features of common environmental involvement, among consumers and fashion users, to confirm if consumers are actually "Lohas" (Lifestyle of health and sustainability) or other style, more restricted, the true market segment of future consumers of sustainable fashion. According to the literature, this group of people who cares about the environment and the sustainable products spend money to promote their potential and personal development. However, their buying behavior is not going with its principles. For financial reasons or some health issues many of them

do not see how the garment may have an impact on personnel health [6] and others did not realize the impact that their purchase of clothing may have on the environment [7]. Then, it came a paradigm between the acquisition and use of clothing in a sustainable way with the importance of personal values of individuals, not discarding the negative or positive connotations that the acquisitions of discarded clothing can benefit.

### APPROACH

The relationship between productivity and resource use in the textile and clothing industry entered in a chronic and ineffectual pattern witnessing environmental and economic impacts at all stages of procedure [8]. Faced with these facts and along with some considerations identified by the "Forum for the Future" [9] and by honorary Greenpeace investigator, David Santillo [10], "Fashion consumption" and "Waste and recycling management" are part of the concerns that should be reviewed for the development of new products.

The "Fashion consumption" relates to an individual's behavior as consumers or users involving questions about clothing purchase, manner of use, preservation and discarding forms after the product life cycles end, factors which essentially depend on lifestyles for each individual.

"Waste" is a problem that has significantly increased due to the growth of "fast fashion", which cooperates with quality levels standardized and low prices, encouraging consumers to have more clothes and discard them quickly. In sequence these discarded clothes go to the landfill because the fashion passed and the items were not sold becoming wasted resources if not recycled. There are some companies which adopt strategies of reusability by collecting discarded clothing to donation (as the case of English Brand Marks & Spencer who develops a "re-use" form in collaboration with Oxfam designated by the Plan A) and other productive sustainable policies adopting using organic or recyclable and biodegradable materials (as the case of Brazilian Osklen).

However, the role of Design should be stimulated to the monetization of resources and waste need to be integrated into solutions which benefits not only to help the social principles of ecology and ethics, as well as, to offer products of a high level of Design for a increasing market aware. Some initiatives have already been promoted as a result of media attention, present in fashion as in "Estethica" (eco sustainable fashion fair in London Fashion Week), "So Ethic" (integrated into Pret-à-Porter Paris), "Challenge" (promoted by the Italian non-governmental association Art Fatto) in "Eco-Fashion" (integrated in

the New York Fashion Week) and other smaller samples submitted punctually as the 22nd Edition of the São Paulo Fashion Week "or international exhibitions related to the Design of products produced with recycled materials, such as Remade, the project of Italian origin.

### LITERATURE

#### Design for environmental and eco fashion

Sustainable Design moves in a rational planning of all resources implied in the product life cycle. And the conscious designer has the function of spreading responsibility and common sense in products that he projected, to minimize harmful impacts to the environment. All phases of a service or product creating, should be accompanied by sustainable and integrated methodologies, since distribution, through use, until their discarding, a theory also advocated by Manzini that corresponds to the exchange of *inputs* and *outputs* between environment and production processes [11].

The Fashion Design must integrate this process too, because their products are cyclical and fast and exert a strong influence on people. It is true that the market is changing and the environmental concern starts to be an important requirement in the clothing design. However, although that movement for a more natural and healthy via has emerged from the 1970s, only since the late 1990s, with ISO 14000, textile firms, among others from different areas, began to develop sustainable projects and extended their concepts to social ethics.

The role of Design and Engineering are crucial in that transformation and increasingly important to the industry. The brand Patagonia that creates and produces recycled clothing as well as the Japanese company Tejin Fibers that launched the "Eco-Circle" [12] are examples of success in monetizing waste and reducing energy consumption and carbon dioxide emissions through the collection and recycling of synthetic garments. Therefore, in practical terms, recycling polyester clothing is a reality because their production processes permit so; the difficulty is in recycle clothing with a mix of different fiber, being hard their separation and their transformation. In our opinion, Design can contribute to evaluate and manage all the possibilities to convert the unusable garments, in new clothing not neglecting the help from potential users.

#### Clothing consumer behavior

The study of consumer behavior examines the attitudes of individuals when they select to use the products, services, ideas or experiences. The product purchase answer the consumers' needs and desires and it is influenced by individual variables (necessity,

motivations and attitudes), sociological and psychological variables (group, social class, cultural variables, family, etc.) as well as by permanent characteristics of individuals (systems of values and personality traits, image itself, lifestyle) [13]. For many researchers, permanent characteristics have shown more effectiveness to analyze consumer's behavior because they differentiate individuals in the same situation and highlight their private constants values. Therefore, the "target segmentation" came to be examined by the combination of three categories: 1) "Activities" (work, recreation, shopping habits); 2) the "interests" (personal values and characteristics that determine the interactions between the individual and the surrounding); 3) and "Opinions" (representations that each individual make their social environment) [14].

The Act of dressing as well as the Act of buying clothing also involves the activities, interests and opinions that each individual thinks about himself and what it represents to the other, implying that the purchase has not only a functional aspects but also has significant aspects. In some cases, it is possible to identify a set of values defining a particular culture or a set of values that identify certain social groups, with characteristics and interests in common. In the study of Cantista *et al.* about the connection of personal values with the consumption of certain styles of garments, for example, most people prefer to use Classic style clothing to feel "secure" in professional activities, since this type of clothing is encoded as "acceptable".

Among the various characteristics of the human being, personal values tend to actually be more stable but to assess consumer behavior, it is also necessary to examine the type of involvement that individuals have with the products, since this is the element that activates your motivation. Involvement is related to the importance of a subject for the individual and the involvement with clothing is defined as the amount of time and efforts that a consumer has, choosing clothing. To evaluate it, Tiger, Ring and King, developed, in 1976, two methodologies, the "Fashion Involvement Index" and "Fashion Involvement Factor", any one of them composed by Likert-type scales, suggesting the existence of five dimensions related to fashion: 1) the time of purchase and the ability of innovation in fashion "; 2) fashion as interpersonal communication; 3) the interest for fashion; 4) the level of information about fashion; 5) and fashion consciousness as a reaction in trends changes [15].

In addition to the data collected and tested scientifically about personal values and evaluation' involvement with clothing, other more rational concepts have also been considered. In the study

carried out by Philippa Crommentuijn-Marsh about consumer behavior between sustainability in fashion, the researcher concluded that there is a constant conflict between its values and its financial power. Buying behaviour of clothing is a combination rational and irrational values that varies with the circumstances and the type of clothing. On the same line of thought, Frings had highlighted the essential reasons for people to buy clothes, generic criteria related to the buying patterns and criteria related to the acquisition of clothing [16].

## Sustainable consumer behavior

Nowadays, consumers are the social actors in the green brands of consumption, and education and knowledge are the principal reasons for changing their consumer habits. The more is their environmental awareness gained degree more will be their preference for environmentally correct products, and more sustainable practices.

The market segment with the greatest environmental involvement is called LOHAS (Lifestyles of Health and Sustainability). It describes people who follow a lifestyle focused on health and physical, social and personal well-being.

Bertolini and Possamai [3] reported that consumer checks their all kinds of waste into daily practices connecting all details. They avoid an industrialized alimentation. They select, buy and use the products which are produced by companies that invest in environmental preservation. They are environmentally well-informed and know exactly what they want; they don't consume less but differently by emphasizing the aspects of recycling, they use clean energy and reduce waste. Schulte and Lopez said in addition that consumer belongs to a restricted group of people, vegetarians, because they are few who care to disseminate the values related to the preservation theory as "don't kill the animals" in any type of product [2]. Also the study of Christine Montero compares the trends in the food industry with the garment industry questioning whether supporters of natural food are potential users of ecological, organic clothing and recycled. Although the sample of respondents was limited to 100 people, the author found that most individuals with healthy eating habits do not acquire organic clothing for not to see that this has some impact on their personal health. This shows that even among LOHAS consumers value systems are leveled in order of importance.

## Sustainability practices in clothing

Values of sustainability do not only apply to the purchase of clothing but to rational consumption too,

as well as, to the forms of clothing are used and its conservation and disposable practices.

Buying on impulse and low price's result in fast fashion cycles are the main reasons that lead to frequent discarding of clothes before the end of its useful life. Be aware of fashion consumer and fit it properly has not been easy, particularly when the ecological articles are still part of the luxury consumer goods. A different luxury than once highlighted the ostentation of tangible objects, but closer to the authenticity of the individual, representing certain values, such as the "value of rarity", "cultural value", "emotional", "brand value" and the "eco-value". "The practice of hiring" as a form of rationalization of consumption is a theory advocated by Papanek and extended to clothing by Carlo Vezzoli. However, this habit dates back to the practice of second-hand clothing using, a factor not always appreciated by some cultures due to the possibility of the proliferation of diseases [17].

Regarding the use and maintenance conscious clothing, "Forum For Future" recounts the importance on "respect the rules of clothing labeling" and "wash with environmentally friendly products" as the correct environmental practices for reducing energy and water. The organization added that "the clothes should be washed at low temperatures with biodegradable detergents and, if possible, in full washing cycles, and not being dry in drums or ironing with high temperature.

In practice of discarding, many academic scientists have been trying to create the profile of individuals that recycle and the profile of those who do not recycle. Psychographic variables related to the attitudes, values and objectives have also been improved through indicators in environmental and behavior analysis for recycling efforts.

Koch and Domina [18] indicated that the most frequent methods of disposal were the "clothing movement between friends and family", followed by "reuse in rags" and "donation to Salvation Army". Nevertheless, DEFRA's (Department for Environmental, Food and Rural Affairs of UK) report depict that "resale of second-hand clothing by internet" is being one influencing factor that decline "donation of clothes" among family members [19].

Previous research had already been considered "unfashionable" the reason more relevant to "higher incomes people" discard their clothes but Koch and Domina related that "fit" is the main reason for students discard their clothes. They also underline the importance of the "access" and the "convenience" to increase recycling practice because some studies have shown that the decision to participate in recycling activities is influenced by the provision of waste collection bins and easily accessible locations.

## METHODOLOGY OF MEASURING INSTRUMENT

### Consumer profile of sustainable fashion

Following the aid instrument made by Bertolini and Possamai [3] for companies wishing to offer ecologically correct products, this tool aims to design a similar questionnaire for a specific clothing field.

The questionnaire will be sent by internet to the Portuguese active female population between 25 and 65 years age, not at the age of the great interest in fashion but who has greater purchasing power. For their implementation, all aspects studied in literature were considered and to facilitate further analysis or make cleaner information to future research it was divided into three sections inquiring about: 1) the consumer profile; 2) buying criteria; 3) environmental awareness.

The consumer profile section covers the personal characteristics of interviewees, what type of clothes they wear, the values associated with clothes and the involvement in fashion. In the "personal characterization", responders should answer questions related to their personal data (age, nationality, level of education) and professional details (occupation and income). In the "clothing use" characterization associated with each individual lifestyle it's also considered general style clothing classifications. Although Frings [16] details series of them, the respondent's perception of all fashion classifications would be complex. Thus, the "activewear" was incorporated as "sportswear" and "suits" was replaced by "formal classic clothing". The question of "values" were only considered the factors relating to the functionality of the dress, the act of "being" and the act of "seam appear", because according to the analyzed studies, people dress how they want to seam or they are obliged to wear according to the professional dress code. "Involvement with fashion" was taken into account from the assessment scale FIF, founded by Tiger, Ring and King in 1976 [15]. This scale, in addition to assessing the individual's involvement in fashion (according to the five main dimensions, described in the literature) also evaluate the consciousness state fashion for each individual, being relevant to characterize the consumer profile.

The following questions are about the type of stores where people buy clothing, an important factor in the Crommentuijin-Marsh [7] study, and about the reasons for purchase. In this field the buying patterns of Frings are considered, among them "quality/price", "fashion", "multiple use", "need" and "services", as well as "brand image", also relieved by Montero, the value "rarity" of Faggianni, mentioned in the study of Shulte [2], and more "customization" value studied

by Crommentuijn-Marsh and the "environmental impact" value too.

The section "environmental awareness" corresponds to the daily habits of individuals, taken by Bertolini and Possamai as important practices to be evaluated in the environmental awareness measurement, as the costs of water and energy and the garbage separation, which join to the conservation habits of garments and the possibility of buying ecological articles or use second-hand clothing. The "discarding habits" are considered in accordance with some concepts of Koch and Domina [18] about methods of textile disposition, as "Passed on to family or friends", "Modified and Reused", "Used as Rags", "Salvation Army or GoodWill", "Garage Sale", "Religious Organizations" and about the reasons for disposal: "Did not fit", "Out of style", "Bored or tired of garment", "Sold to recoup some of the original cost", "Damaged or worn out", "Convenience of disposal", "Garment was not wasted", without neglecting the "resale by internet" referred to in the DEFRA's report [19].

The most part of the answers follow the order of the Likert scale with five points.

## CONCLUSION

Until the closing date of this article it has undergoing a pre-test of the questionnaire.

In the universe of 50 people, some of the pre-conclusions are: the majority replied that likes to buy clothing that are innovative in the way of dressing and they always have last fashion trend items, part of them were bought into commercial areas.

Some responders focuses on streamlining their fashion consumption and the vast majority do not have purchasing habits or use of second-hand clothing (discarded) because they prefer to buy new clothing on sales, or because they unaware the shops that sell that kind of articles.

Half of those surveyed would be willing to buy discarded clothing, reused or produced from recycled fabrics since the main reasons of purchase is filled items such as "good price", "innovation", "comfort" and "image".

All people discard clothing after each season whose primary reason is "no longer serve" and the key methods are the "donation to charities", "Church" or "passed on family or friends".

These conclusions come to confirm, that there is a strong involvement of individuals in fashion, the environmental concern has been evolving and the strong need for action in the field of clothing sustainability, especially through the services of Design or Redesign, where the collection of textile waste should be integrated into all stages of product life cycle to better maximize reuse and recycling.

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